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REMARKS

The Office Action dated June 3, 2004, has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-4 and 6-21 are now pending in this application. Claims 1-4 and 6-21 stand rejected. Claims 7, 14, and 21 have been amended. New Claim 22 has been added. No fee is due for newly added Claim 22.

In the drawings, Figure 2 has been amended to include reference number 50 for the substantially circular outer diameter of the refrigerant tube 12 previously shown in Figure 2 and other figures. The amendment adds no new matter.

The specification has been amended for consistency with Figure 2, reciting the substantially circular outer diameter 50 of the refrigerant tube 12.

The rejection of Claims 1-4, 6-13, and 21 under 35 U.S.C. § 103(a) as being unpatentable over C.A. Heuer (U.S. Patent No. 3,173,479) in view of Brickman (U.S. Patent No. 2,620,170) is respectfully traversed.

Heuer describes a unitary heat exchanger fabricated from superposed sheets of metal brazed or pressure welded together to form a flat sheet element (1). A weld inhibiting material (2) is applied between the superposed sheets to define two patterned fluid passageways (5) and (6) joined by an intermediate passageway (7). The sheet element (1) is spirally wound about a central opening (11) into a coil (10) having two substantially cylindrical convolutions (12) and (13), each including one of the patterned fluid passageways (5), (6) between terminal portions (15), (16) and (17), (18). An offset portion (14) includes the interconnecting passageway (7). The sheet element (1) is also provided with a plurality of louvered transfer openings (19) that extend at an angle out of the face of the element. The spiral element can be used as a condenser (10) mounted on a base (26) with a compressor unit (27) within the central opening (11) of the condensor. A fluid impeller (28) is also disposed within the central opening (11). Notably, Heuer describes passageways created in a sheet of material and the passageways do not have a substantially circular outside diameter. Rather,

Heuer refers to the distensions forming the passageways as “being opposed rigid surfaces provides a flat-top configuration 21 to the conduit system 20” (col. 4, lines 29-31).

Brickman describes a heat transfer unit that includes a tube (2) having a plurality of bends (4). A plurality of bent wires (12) extends transversely to the bent tube. Each of the wires includes a plurality of bends (14) so that part of each wire is on each side of the tube. The bent tube has a plurality of return bends therein, all in the same plane.

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. Obviousness cannot be established by merely suggesting that it would have been an obvious to one of ordinary skill in the art to modify Heuer according to the teachings of Brickman. More specifically, as is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination.

Specifically, Heuer is cited for teaching of a spiraled condenser and Brickman is cited for disclosing a tube with a plurality of bends and a plurality of bent wires extending transversely over the tube. The Office Action asserts that it would have been obvious to employ a wire and tube heat transfer unit in the Heuer condenser. However, this is contrary to the stated objective of Heuer to provide a one-piece heat exchanger of unitary construction (col. 1, lines 39-43). Thus, if combined with Heuer, the Brickman tube and wire assembly represents an unnecessary accumulation of parts offering no advantages and would clearly frustrate the unitary construction objective. In addition to the combination of Brickman and Heuer frustrating the objective of Heuer, the combination also is contrary to the teachings of Brickman. For example, Brickman teaches a tube having a plurality of return bends therein, all in the same plane, which is not achievable with the convolutions described by Heuer.

Further, the Heuer condenser is formed by applying a weld inhibiting material that forms passageways between superposed sheets that are pressure welded together. A plurality of louvered openings formed in the sheet element “form an integral part of an arrangement of the heat exchanger” (col. 3, lines 58-60). “These louvers may be in uniform sequence or in any staggered relationship desired with their flared ends directed in any single or multiple direction depending on the type and degree of turbulence required for a specific application in

order to control the flow of an external fluid medium through the transfer opening and its impingement against successive convolutions of the coil” (col. 3, lines 68-75). Thus, the Heuer condenser provides capabilities that a tube and wire heat exchanger, if substituted for the Heuer condenser, cannot provide. If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). It is apparent that no motivation for the suggested combination can be found in the teachings of Heuer and Brickman alone.

Moreover, the Federal Circuit has determined that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000).

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. *Ex parte Levengood*, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants’ disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicants’ disclosure. *In re Vaeck*, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion nor motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown. Accordingly, Applicants respectfully request that the Section 103 rejection of Claims 1-4, 6-13, and 21 be withdrawn.

Claim 1 recites a method for increasing the efficiency of a refrigerator condenser assembly including a tube and wire member having an inner edge and an outer edge, the method including the steps of “forming the tube and wire member into a spiral including first and second ends and a longitudinal passageway therebetween, said tube having a

substantially circular outer diameter; and closing the first end, thereby preventing longitudinal air flow through the first end”.

Neither Heuer nor Brickman, considered alone or in combination, fairly describe or suggest a method for increasing the efficiency of a refrigerator condenser assembly including a tube and wire member having an inner edge and an outer edge, the method including the steps of forming the tube and wire member into a spiral including first and second ends and a longitudinal passageway therebetween, the tube having a substantially circular outer diameter, and closing the first end, thereby preventing longitudinal air flow through the first end. Moreover, neither Heuer nor Brickman, considered alone or in combination, fairly describe or suggest forming a tube and wire member into a spiral, the tube having a substantially circular outer diameter. Rather, Heuer describes a one-piece condenser having channels between welded sheet elements wherein the channels have a flat-top configuration as opposed to an outer diameter, and Brickman describes a flat wire and coil heat transfer unit where a plurality of return bends are all in the same plane.

Accordingly, for the reasons set forth above, Claim 1 is submitted to be patentable over Heuer in view of Brickman.

Claims 2-4 and 6 depend from independent Claim 1. When the recitations of Claims 2-4 and 6 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2-4 and 6 likewise are patentable over Heuer in view of Brickman.

Claim 7 recites an apparatus including “a refrigerator condenser comprising a spiraled tube and wire member, said spiraled tube having a substantially circular outer diameter”.

Neither Heuer nor Brickman, considered alone or in combination, fairly describe or suggest an apparatus that includes a refrigerator condenser including a spiraled tube and wire member, the spiraled tube having a substantially circular outer diameter. Moreover, neither Heuer nor Brickman, considered alone or in combination, fairly describe or suggest a tube and wire member formed into a spiral, the tube having a substantially circular outer diameter. Rather, Heuer describes a one-piece condenser having channels between welded sheet elements wherein the channels have a flat-top configuration as opposed to an outer diameter,

and Brickman describes a flat wire and coil heat transfer unit where a plurality of return bends are all in the same plane.

For at least the reasons set forth above, Claim 7 is submitted to be patentable over Heuer in view of Brickman.

Claims 8-13 depend from independent Claim 7. When the recitations of Claims 8-13 are considered in combination with the recitations of Claim 7, Applicants submit that dependent Claims 8-13 likewise are patentable over Heuer in view of Brickman.

Claim 21 recites a refrigerator condenser including “a tube coupled to a wire member and formed into a spiral, said tube having a substantially circular outer diameter, said spiraled tube and wire member defining a continuous layered condenser surface”.

Neither Heuer nor Brickman, considered alone or in combination, fairly describe or suggest an apparatus that includes a refrigerator condenser including a tube coupled to a wire member and formed into a spiral, the tube having a substantially circular outer diameter, the spiraled tube and wire member defining a continuous layered condenser surface. Moreover, neither Heuer nor Brickman, considered alone or in combination, fairly describe or suggest a tube and wire member formed into a spiral, the tube having a substantially circular outer diameter. Rather, Heuer describes a one-piece condenser having channels between welded sheet elements wherein the channels have a flat-top configuration as opposed to an outer diameter, and Brickman describes a flat wire and coil heat transfer unit where a plurality of return bends are all in the same plane.

For the reasons set forth above, Claim 21 is submitted to be patentable over Heuer in view of Brickman.

For at least the reasons set fourth above, Applicants respectfully requests that the section 103(a) rejection of Claims 1- 4, 6-13, and 21 be withdrawn.

The rejection of Claims 14-20 under 35 U.S.C. § 103(a) as being unpatentable over C.A. Heuer and Brickman in view of Simmons et al. (U.S. Patent No. 3,865,517) is respectfully traversed.

Heuer and Brickman are described above. Simmons et al describe a refrigeration condenser unit that includes a housing (1) and a condenser coil (3). A fan (5) is provided for drawing air over the condenser coil (3). The warmed air is discharged through an opening (7) in the housing (1). As best understood from Figure 2, air enters the housing through louvered openings angled into the housing.

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. Obviousness cannot be established by merely suggesting that it would have been an obvious to one of ordinary skill in the art to modify Heuer according to the teachings of Brickman, and further according to the teachings of Simmons et al. More specifically, as is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination.

Specifically, Heuer is cited for teaching of a spiraled condenser and Brickman is cited for disclosing a tube with a plurality of bends and a plurality of bent wires extending transversely over the tube. The Office Action asserts that it would have been obvious to employ a wire and tube heat transfer unit in the Heuer condenser. However, this is contrary to the stated objective of Heuer to provide a one-piece heat exchanger of unitary construction (col. 1, lines 39-43). Thus, if combined with Heuer, the Brickman tube and wire assembly represents an unnecessary accumulation of parts offering no advantages and would clearly frustrate the unitary construction objective. In addition to the combination of Brickman and Heuer frustrating the objective of Heuer, the combination also is contrary to the teachings of Brickman. For example, Brickman teaches a tube having a plurality of return bends therein, all in the same plane, which is not achievable with the convolutions described by Heuer.

Further, the Heuer condenser is formed by applying a weld inhibiting material that forms passageways between superposed sheets that are pressure welded together. A plurality of louvered openings formed in the sheet element “form an integral part of an arrangement of the heat exchanger” (col. 3, lines 58-60). “These louvres may be in uniform sequence or in any staggered relationship desired with their flared ends directed in any single or multiple direction depending on the type and degree of turbulence required for a specific application in

order to control the flow of an external fluid medium through the transfer opening and its impingement against successive convolutions of the coil” (col. 3, lines 68-75). Thus, the Heuer condenser provides capabilities that a tube and wire heat exchanger, if substituted for the Heuer condenser, cannot provide. If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). It is apparent that no motivation for the suggested combination can be found in the teachings of Heuer and Brickman alone.

Moreover, the Federal Circuit has determined that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000).

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. *Ex parte Levengood*, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicants' disclosure. *In re Vaeck*, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion nor motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown. Accordingly, Applicants respectfully request that the Section 103 rejection of Claims 14-20 be withdrawn.

Claim 14 recites a refrigerator condenser assembly including “a spiraled tube and wire member comprising a first end, a second end, and a passage therebetween, said spiraled tube having a substantially circular outer diameter; a fan blade assembly mounted at said second

end and external to said passage; and a closure member mounted at said first end, said closure member preventing air from entering said passage through said first end”.

None of Heuer, Brickman, and Simmons et al., considered alone or in combination, fairly describe or suggest a refrigerator condenser assembly including a spiraled tube and wire member including a first end, a second end, and a passage therebetween, said spiraled tube having a substantially circular outer diameter, a fan blade assembly mounted at the second end and external to the passage, and a closure member mounted at the first end, the closure member preventing air from entering the passage through the first end. Moreover, none of Heuer, Brickman, and Simmons et al., considered alone or in combination, fairly describe or suggest a spiraled tube and wire member, the tube having a substantially circular outer diameter. Rather, Heuer describes a one-piece condenser having channels between welded sheet elements wherein the channels have a flat-top configuration as opposed to an outer diameter, Brickman describes a flat wire and coil heat transfer unit where a plurality of return bends are all in the same plane, and Simmons et al. describe merely a condenser coil with a fan in a louvered housing.

Accordingly, for the reasons set forth above, Claim 14 is submitted to be patentable over Heuer and Brickman in view of Simmons et al.

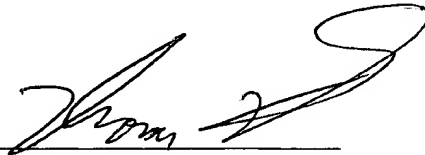
Claims 15-20 depend from independent Claim 14. When the recitations of Claims 15-20 are considered in combination with the recitations of Claim 14, Applicants submit that dependent Claims 15-20 likewise are patentable over Heuer and Brickman in view of Simmons in view of Simmons et al.

For at least the reasons set fourth above, Applicants respectfully requests that the section 103(a) rejection of Claims 14-20 be withdrawn.

Newly added Claim 22 depends from Claim 1 which is submitted to be patentable over the cited art as indicated above. When the recitations of Claim 5 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claim 5 likewise is patentable over the cited art.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'Thomas M. Fisher', written over a horizontal line.

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ANNOTATED

1 of 3

~~Replacement Sheet~~

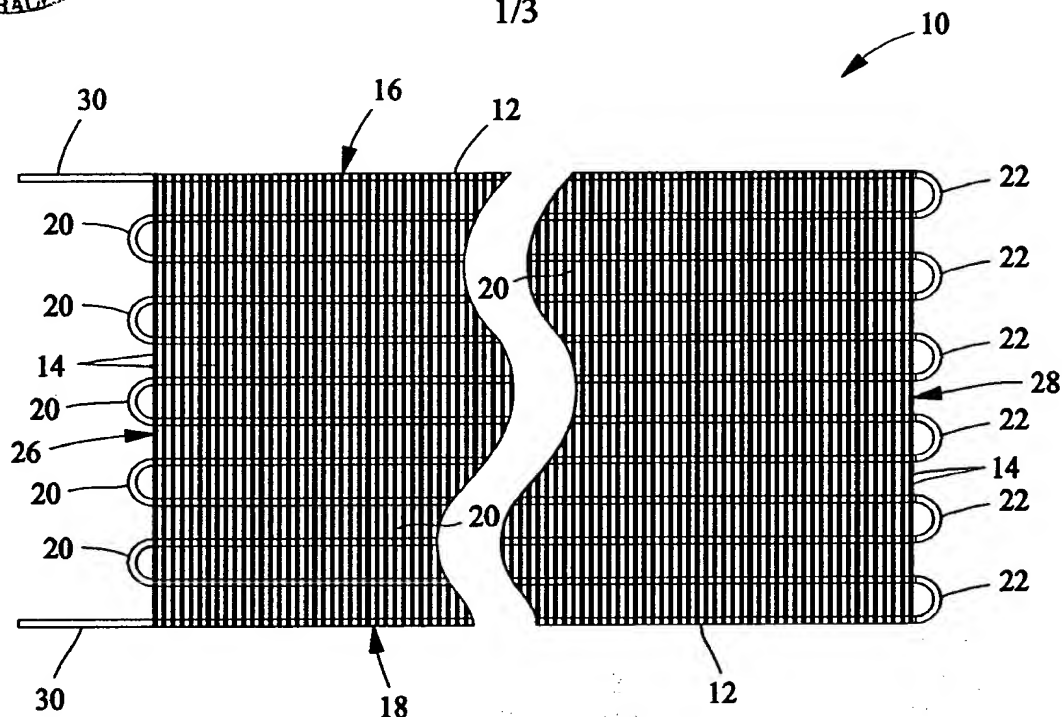
Applicant: McDonald, et al.

Serial No.: 09/484,292 Art Unit: 3743

Filed: January 18, 2000

For: CONDENSER

1/3



PRIOR ART
FIG. 1

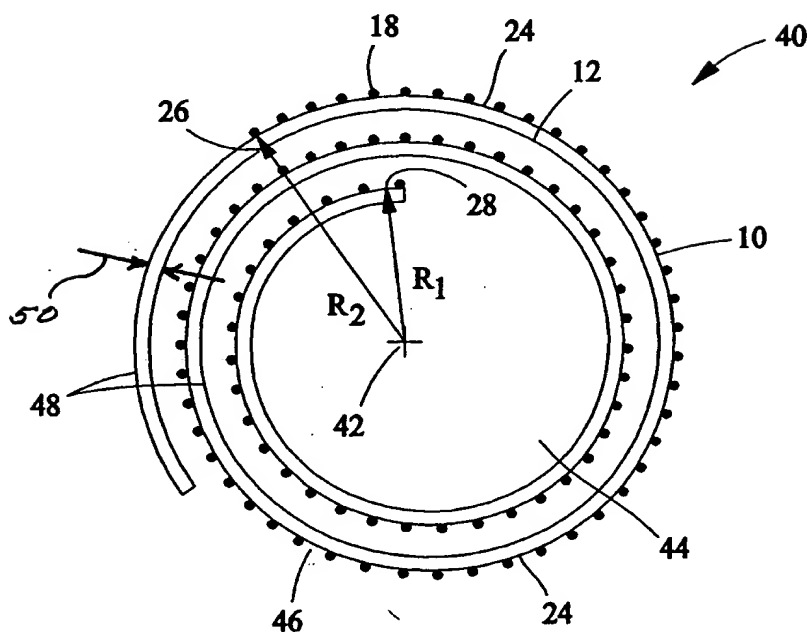


FIG. 2